

REMARKS

By this Amendment, the specification is amended. Claims 1-63 are pending.

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Attached hereto is a paper, captioned "Amendment Appendix" showing the marked-up version of the changes made by this Amendment.

Record Acknowledgment of Information Disclosure Statement

Applicants take this opportunity to point out that the Examiner has not returned to Applicants an initialed copy of the Form PTO-1449 filed with the Information Disclosure Statement of December 12, 2000. Please provide an initialed copy of this document along with the next communication from the Office.

Defective Oath/Declaration

While Applicants do not agree that a facsimile copy of an original signature is "not in permanent ink", the original Declaration, corresponding to the facsimile copy of the Declaration filed with the application, is attached hereto to obviate any possible basis for the assertion that the Declaration is defective.

As regards the assertion that a facsimile reproduction of a Declaration is defective, 37 CFR 1.52 provides in pertinent part:

All papers which are to become a part of the permanent records of the Patent and Trademark Office must be legibly written either by a typewriter or mechanical printer in permanent dark ink or its equivalent in portrait orientation on flexible, strong, smooth, non-shiny, durable, and white paper. [Emphasis added.]

Thus, the facsimile copy of the original Declaration is a paper legibly reproduced by a "mechanical printer in permanent dark ink or its equivalent" in accordance with 37 CFR 1.52 and no substitute Declaration is necessary.

Rejections under 35 U.S.C. § 112

Claims 41 and 62 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite in their recitation of the terms "homogeneous" and "electrical circuit". This rejection is respectfully traversed.

Claim 41 further defines the method of claim 37 as being a homogeneous assay. The expression "homogeneous assay" is a well-known term in the art, as evidenced by its appearance in 682 patents since 1976 (see Exhibit A). The first patent since 1976 using this term, U.S. Patent No. 3,935,074 at column 1, lines 36-40, provides the following definition of the term "homogeneous" in the context of a homogeneous assay:

Recently, two homogeneous immunoassay techniques have been developed by Syva Company, sold under the trademarks, FRAT, and EMIT. By homogeneous it is intended that after mixing the reagent, the assay does not require a separation step.

Similarly, the present specification discusses the term "homogeneous" in the following excerpt from the paragraph bridging pages 18-19:

The assay of the invention is preferably homogeneous. The assay can be conducted without separating the cleaved probe fragments from hybridization complex, free intact probe and free target prior to detecting the magnitude of the measured signal.

Accordingly, one of ordinary skill in the art would have readily understood the meaning of the term "homogeneous" in claim 41, when read in view of the specification and the conventional understanding of the term in the context of assays.

Claim 62 is directed to an electrical circuit comprising the composition of claim 1. The expression "electrical circuit" is a term of art understood by ordinarily skilled artisans in the assay art, and more specifically, in the assay apparatus art. Such artisans would readily appreciate that an electrical circuit is a conduit adapted to cycle electricity to and from an electric power source. A non-limiting example of an electrical circuit comprising the composition of claim 1 is where electricity is conveyed from an electric source through one electrode placed in the composition of

claim 1, across the composition, through a second electrode placed in the composition of claim 1, and back to the electric source. See the present specification at page 13, lines 18-21.

Accordingly, reconsideration and withdrawal of the rejection of claims 41 and 62 under 35 U.S.C. § 112 are respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-13, 15-17, 19-44, 47-58, 60 and 62-63 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,660,988 to Duck et al. in view of U.S. Patent No. 5,874,555 to Dervan et al. In addition, claims 14, 18, 45-46, 59 and 61 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Duck et al. in view of Dervan et al., and further in view of U.S. Patent No. 5,88,739 to Pinter et al. and U.S. Patent No. 5,403,711 to Walder et al. These rejections are respectfully traversed.

The Office Action fails to appreciate the differences between the teachings of Dervan et al. regarding triplexes, and the present claims. As discussed in the present specification in the paragraph bridging pages 1-2, Dervan et al. teaches triplexes "based on Hoogsteen binding between limited varieties of adjacent nucleobases, rather than Watson-Crick base pairing." The claimed invention is distinguished from the teachings of references such as

Dervan et al., in the following passage from the present specification at page 11, lines 13-17:

Unlike certain triplexes and quadruplexes discussed in the Background Section above, the preferred multiplex structures of the invention contain at least three strands of nucleic acid bonded together according to traditional Watson-Crick bonding rules.

As Dervan et al. fails to disclose the triplexes and quadruplexes of the present claims, it cannot remedy the acknowledged failure of the primary reference, Duck et al., to "teach formation of multiplex structure and promoter of the probe." (see the Office Action at page 4, lines 10-11). Thus, the proposed combination of reference teachings fails to disclose or suggest each and every limitation of the claimed invention, and the Office Action fails to show a *prima facie* case of obviousness. MPEP 2143.

Moreover, neither Pinter et al. nor Walder et al. remedy the failure of Duck et al. to disclose the claimed multiplexes.

Accordingly, reconsideration and withdrawal of the obviousness rejections of claims 1-63 are respectfully requested.

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

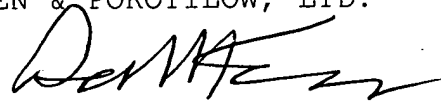
Should the Examiner believe that anything further is desirable in order to place the application in even better condition for

Application No. 09/713,177

allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

By 

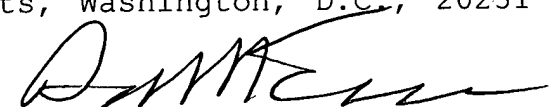
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July 3, 2001

Please charge or credit
our Account No. 03-0075
as necessary to effect
entry and/or ensure
consideration of this
submission.

CERTIFICATE OF MAILING

I hereby certify that the foregoing Amendment and attached Transmittal, Exhibit A and Original Declaration are being deposited with the United States Postal services as First Class Mail, postage prepaid, in an envelope addressed to: Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C., 20231 on this 3rd day of July, 2001.


David M. Tener, Reg. No. 37,054



Application No. 09/713,177

AMENDMENT APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is amended at page 1, lines 4-8, as follows:

This application is a continuation-in-part of U.S. Patent Application No. 09/644,827, filed September 19, 2000, [which is] and a continuation-in-part of U.S. Patent Application Serial No. 09/468,679, filed December 21, 1999, the disclosures of which are incorporated by reference herein in their entireties.

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Results of Search in All Years db for:

"homogeneous assay": 682 patents.

Hits 1 through 50 out of 682

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PAT. NO.	Title
1 6,251,690	<u>T Electrical excitation of label substances at insulating film-coated conductors</u>
2 6,251,600	<u>T Homogeneous nucleotide amplification and assay</u>
3 6,251,597	<u>T Methods for detecting fohy030</u>
4 6,251,581	<u>T Assay method utilizing induced luminescence</u>
5 6,248,528	<u>T Methods and compositions for the diagnosis and treatment of neuropsychiatric disorders</u>
6 6,248,526	<u>T Labeled primer for use in and detection of target nucleic acids</u>
7 6,243,980	<u>T Protease inhibitor assay</u>
8 6,242,268	<u>T Homogeneous fluorassay methods employing fluorescent background rejection and water-soluble rare earth metal chelates</u>
9 6,242,188	<u>T Sample processing to release nucleic acids for direct detection</u>
10 6,239,271	<u>T Energy transfer hybridization assay composition</u>
11 6,238,875	<u>T Diagnostic methods useful in the characterization of lymphoproliferative disease characterized by increased EPR-1</u>
12 6,235,539	<u>T Analyte assays and devices</u>
13 6,232,104	<u>T Detection of differences in nucleic acids by inhibition of spontaneous DNA branch migration</u>
14 6,229,005	<u>T DNA sequences of enterically transmitted non-A/non-B hepatitis viral agent</u>
15 6,228,983	<u>T Human respiratory syncytial virus peptides with antifusogenic and antiviral activities</u>
16 6,228,582	<u>T Genetic polymorphisms which are associated with autism spectrum disorders</u>
17 6,225,084	<u>T Compositions and methods for the treatment and diagnosis of cardiovascular disease using rchd534 as a target</u>

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare:

Sheet Number (optional) E1047/20048

My residence, post office address and citizenship are as stated below next to my name:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

TRIPLEX AND QUADRUPLEX CATALYTIC HYBRIDIZATION

the specification of which is attached hereto unless the following box is checked:

☐ Was filed on _____ as United States Application Number or PCT International Application Number _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56. I hereby claim foreign priority benefits under 35 U. S. C. §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed

___ Yes ___ No

(Number) (Country) (Day/Month/Year Filed)

(Number) (Country) (Day/Month/Year Filed)

___ Yes ___ No

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

Application Number (Filing Date)

Application Number (Filing Date)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international date of this application.

<u>09/644,827</u>	<u>September 19, 2000</u>	<u>Pending</u>
Application Number)	(Filing Date)	(Status-patented, pending, abandoned)
<u>09/468,679</u>	<u>December 21, 1999</u>	<u>Pending</u>
(Application Number)	(Filing Date)	(Status-patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Alan H. Bernstein (Registration No. 19,315); Stanley H. Cohen (Registration No. 20,235); Manny D. Pokotilow (Registration No. 22,492); Barry A Stein (Registration No. 25,257); Martin L. Faigus (Registration No. 24,364); Eric S. Marzluf (Registration No. 27,454); Robert S. Silver (Registration No. 35,681); Scott M. Slomowitz (Registration No. 39,032); Michael J. Berkowitz (Registration No. 39,607); David M. Tener (Registration No. 37,054); James J. Kozuch (Registration No. 39,733); Frank M. Linguiti (Registration No. 32,424); Gary A. Greene (Registration No. 38,897); Marilou E. Watson, (Registration No. 42,213); Michael J. Cornelison (Registration No. 40,395) and Christopher Marrone (Registration No. 45,101), care of Caesar, Rivise, Bernstein, Cohen & Pokotilow, Ltd., 12th Floor, Seven Penn Center, 1635 Market Street, Philadelphia, Pennsylvania 19103-2212, my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) GLEN H. ERIKSONInventor's signature Glen EriksonDate 15 Nov. 2000Residence Turks and Caicos Islands, British West IndiesCitizenship CanadaPost Office Address The Sands, Providenciales, Turks and Caicos Islands, British West IndiesFull name of second joint inventor, if any (given name, family name) JASMINE I. DAKSISSecond Inventor's signature Jasmine DaksisDate 15 November, 2000Residence Richmond Hill, Ontario, CanadaCitizenship CanadaPost Office Address 36 Cartier Crescent, Richmond Hill, Ontario, Canada L4C 2N2

Additional inventors are being named on separately numbered sheets attached hereto. _____